

Mission Command During the War of
Movement in World War I –
Initiative and Synchronization of the German
Right Wing in August and Early September 1914

A Monograph

by

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Abstract

Mission Command During the War of Movement in World War I—Initiative and Synchronization of the German Right Wing in August and Early September 1914, by LTC Martin Sonnenberger, 62 pages.

German planning prior to World War I relied upon a quick decisive defeat of the western armies in Belgium and eastern France through a large enveloping movement of the three armies attacking at the German right wing through Belgium and northern France. Compared to warfare in 1870, this required a change in terms of the required balance between initiative and synchronization.

The thesis analyzes how the philosophy of *Auftragstaktik*, the command structure, and communications influenced the army level execution of the initial campaign at the Western Front in 1914 and contributed to its final failure.

First, it constructs a theory of German command philosophy, command structure, and communications as a framework of reference.

Secondly, it analyzes decision points during the opening weeks of the 1914 campaign and interactions between Moltke's supreme command and the army level. The decision points depict the tension between the art of command and the science of control and its causes.

Finally, the thesis provides an analysis of theory and practice of Mission Command at the beginning of World War I as a basis for the deduction of lessons about the art of command and the science of control. It shows that the German Army possessed a doctrinal framework and a culture that endorsed decentralized execution and initiative. Preparation for the war, however, had failed to achieve clarity about the operational approach and omitted the development of a functioning command structure. Means of communications did not allow for adequate transmission of reports due to deficiencies in both the speed and volume of traffic. Exempt by doctrine from reporting during an ongoing battle, commanders culturally did not see an importance in keeping the OHL and their adjacent units informed about their own situation and intentions.

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Acronyms

BEF	British Expeditionary Force
OHL	<i>Oberste Heeresleitung</i>

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Introduction

It is difficult to defend Moltke's prosecution of the 1914 campaign, but it is easy to sympathize with him. Especially toward the end, during the battle of the Marne, Moltke lost control of the operation. Alone in his office, far from the front, carrying the fate of Germany on his slumped shoulders, his desk piled high with a mountain of paper that he did not even have time to read, let alone digest, he was the first victim of a twentieth-century problem: information overload. . . . Moltke reacted by "pressing the delete button," in a sense, abdicating his command and sending [Lieutenant] Colonel Richard Hentsch on his fateful journey to the front, with orders to "coordinate a general withdrawal," if necessary.¹

— Robert M. Citino, *Blitzkrieg to Desert Storm*

One hundred years after the outbreak of World War I, the dominant view of the war is of the matériel battles in the trenches of the Western Front. The senseless slaughter of a generation of young men absent gains beyond a few feet of soil and without inherent military value seemed to indicate the failure of the military elites to develop or apply plans that allowed the execution of decisive warfare. This focus, however, fails to address other theaters of the war in East Prussia, Poland, and Russia, as well as the operations that unfolded in Belgium and France in the opening weeks of the war.

German strategic planning prior to World War I relied upon the notion of a quick decisive defeat of Belgian, French, and, if required, British forces in Belgium and eastern France. With victory in the West, subsequent deployment of a majority of German units to the Eastern Front for the defeat of Russia, believed to mobilize more slowly, became a likely option that would conclude the war. General Count Alfred von Schlieffen developed the operational concept that would achieve this objective and General Helmuth von Moltke, his successor, adapted it. Schlieffen's operational construct foresaw a large enveloping movement of the three armies attacking at the German right wing through Belgium and northern France.² The campaign based upon this approach ultimately failed for a variety of

¹ Robert M. Citino, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare* (Lawrence, KS: University Press of Kansas, 2004), 15-16.

² The existence and form of Schlieffen's concept—generally termed Schlieffen Plan has been subject to intensive discussion of historians during the last century. Latest research

reasons during the Battle of the Marne when events forced the German Army to stop the offensive and withdraw to counter and defend against a French flanking attack.³

Prior to the war, the German Army had been aware that it would likely have neither numerical nor technological superiority over adversaries it would face. Therefore, success would lie in the realm of better-trained forces and superior command.⁴ In the wars of unification, particularly in 1870, superior command in the form of initiative of commanders at the army level had enabled the swift defeat of the French Army.⁵ This thesis uses the doctrinal terminology of US Army Mission Command as a lens to describe German doctrine, culture, and the actions of German commanders in World War I. US Army Doctrine Publication 6-0 describes the Mission Command philosophy consisting of the Art of Command and the Science of Control. Commanders under Mission Command “exercise

and the access to archives formerly hidden behind the Iron Curtain have proven the existence of a concept paper that Schlieffen left for his successor Moltke. See Hans Ehlert, Michael Epkenhans, and Gerhard P. Gross, ed., *Der Schlieffenplan, Analysen und Dokumente* (Paderborn, Germany: Ferdinand Schöningh, 2007); Annika Mombauer, “German War Plans,” in *War Planning 1914*, eds., Richard F. Hamilton and Holger H. Herwig (New York: Cambridge University Press, 2010), 48-79.

³ Holger Herwig describes the meeting of Moltke’s emissary, Lieutenant Colonel Richard Hentsch, at Second Army’s headquarters on the evening of September 8 as pivotal to the decision to halt the attack. While he discussed the general situation and the potential threat caused by the French Seventh Army attack against First Army’s right flank and a gap between First and Second Army with Second Army’s key leaders, a breakthrough of French XVIII Corps through Second Army’s VII Corps and a subsequent threat to Second Army’s rear was reported. Commander Second Army, General Karl von Bülow immediately and without consultation of First Army ordered three corps of his right wing to fall back fifteen to twenty kilometers to escape envelopment. Through this decision, he created the facts that lead to the end of the German offensive. See Holger H. Herwig, *The Marne, 1914: The Opening of World War I and the Battle That Changed the World* (New York: Random House, 2009), 273-275. The forcing function of Second Army’s right wing’s withdrawal is also stated by Commander First Army, General von Kluck. See Alexander von Kluck, *The March on Paris and the Battle of the Marne 1914* (London: Edward Arnold, 1920), 134-139.

⁴ Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung* (Berlin: Reichsdruckerei, 1910), 16-17.

⁵ Robert M. Citino provides a vivid description of the struggle between the French Army, superior in infantry weaponry but very passive in terms of reacting to the development of the situation and the Prussian Army that repeatedly gained the advantage of flanking position through its commander’s initiative. Robert M. Citino, *The German Way of War, From the Thirty Years’ War to the Third Reich* (Lawrence, KS: University Press of Kansas, 2005), 174-189.

disciplined initiative [to] create opportunity by taking action to develop the situation.”⁶ The disciplined initiative of individual commanders accumulates to setting the conditions for the fight, defined as operational initiative.⁷ Gaining and maintaining the initiative finally leads to a position of relative advantage over the enemy.⁸

The Art of Command consists of providing purpose, direction, and motivation, the delegation of authority, and accounting for the human aspects of command. Based on the provision of the commander’s intent and a mutual understanding, it encourages initiative through leadership and the delegation of authority.⁹ Hence, one can measure the Art of Command through the exercise of disciplined initiative at different levels.

The Science of Control improves the commander’s understanding and supports the accomplishment of missions through information provided by means of communication, defined by the command structure.¹⁰ The adequate balance of the art and the science allows for a combination of agile, adaptive leadership and mutual support of multiple units, following the intent of their superior commander. Army Doctrine Publication 6-0 states, the “appropriate level of control varies with each situation and is not easy to determine. Effective commanders impose enough control to maximize total combat power while allowing subordinates freedom of action.”¹¹ The German Army at the eve of World War I used a

⁶ US Department of the Army, Army Doctrine Reference Publication 6-0, *Mission Command* (Washington, DC: Government Printing Office, September 2012), 1-1.

⁷ US Army ADRP 1-02 C2 defines operational initiative as “[t]he setting or dictating the terms of action throughout an operation.”

⁸ US Department of the Army, Army Doctrine Publication 6-0, *Mission Command*, iv.

⁹ Ibid., 5-7.

¹⁰ Ibid., 7-8.

¹¹ Ibid., 9.

comparable approach, distinguishing between the philosophy of *Auftragstaktik*, the command relations resulting from the *Ordre de Bataille*, and communication.¹²

Differing from the planning and conduct of operations during the victorious Wars of Unification—the first being in 1866 and the second war from 1870 to 1871—the operational approach of the *Aufmarsch 1913/14* (Deployment 1913/14)—the German war plan executed at the opening of World War I—aimed at a strategic level envelopment with tight maneuver schedules and timelines.¹³ In contrast, the aforementioned Prussian campaigns consisted of a movement to contact in the direction of the assumed adversary or suitable terrain and a force centric approach aimed at the defeat of units. As a general scheme of maneuver, the unit making the initial contact fixed the enemy force frontally, trusting on the adjacent units to march to the sound of the guns and attack the adversary's flanks.

The terrain focused, tightly scheduled approach of *Aufmarsch 1913/14* resulted in a massive change in terms of the required balance between initiative, synchronization, and command and control to create a cohesively advancing front. Interestingly, the implications of this fundamental change of the operational approach did not seem to have been obvious to the practitioners of the time. There is no evidence of a discussion of the implications of this change and neither of the capstone manuals, the *Instructions for Large Unit Commanders* and the *Exerzier-Reglement*, adjust to account for it.¹⁴ The execution of the campaign depicted on several occasions a lack of coordination between the different armies.

¹² Helmut Karl Bernhard von Moltke, “Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869,” in *Moltkes Militärische Werke, Zweiter Theil, Die Tätigkeit als Chef des Generalstabs im Frieden*, ed. Preußischer Generalstab (Berlin, Germany: Ernst Siegfried Mittler und Sohn, 1900), 175-177, 179-182. Preußisches Kriegsministerium, *D.V.E. Nr. 130 Exerzier-Reglement für die Infanterie*, including changes until August 1906 (Berlin, Germany: Ernst Siegfried Mittler und Sohn, 1906), 16.

¹³ Ehlert, Epkenhans, and Gross, *Der Schlieffenplan, Analysen und Dokumente*, 467-477.

¹⁴ The discussion within the German Army between 1871 and 1914 focused rather on the technological developments of artillery and infantry weapons and the resulting effects on the tactical employment of the different branches than on the feasibility of the operational approach. See Eric Dorn Brose, *The Kaiser's Army, The Politics of Military Technology in Germany during the Machine Age* (New York: Oxford University Press, 2001); Gordon A.

The quote from Citino at the opening of this chapter vividly described information overload at the supreme army command, yet Holger H. Herwig, in his book *The Marne 1914*, indicates the opposite, instead suggesting information and a common operating picture were lacking. This work analyzes how the philosophy of *Auftragstaktik*, the command structure, and communication, influenced decision-making and the army level execution of the initial campaign at the Western Front in 1914, contributing to its eventual failure. Analyzing the roughly five weeks of the initial campaign until its culmination, with a focus on the command philosophy, the command structure, and communications at the strategic and army level of the German right wing,¹⁵ allows for an assessment of theory and practice of different components of mission command and the relationship between them in a given information environment. Hence, it also allows for insights into the determination of an appropriate balance between the art of command and the science of control.

Current US Army Mission Command doctrine, rooted in the German concept of *Auftragstaktik*, describes a concept of command that accounts for the nature of operations as characterized by human interaction and the contest of wills in complex, ever changing, and uncertain operational environments.¹⁶ Its central idea—to seize, retain, and exploit the initiative, guided by the philosophy of mission command—is similar to the German understanding and culture of command. The methodology of the monograph consists of three elements. First, the second section constructs a theory of German command philosophy, command structure, and communications as a framework of reference. The basis for the

Craig, *The Politics of the Prussian Army 1640-1945* (New York: Oxford University Press, 1964), Chapter VII.

¹⁵ In total, the German Army employed seven armies at the Western Front; the mobilization plan *Aufmarsch 1913/14* planned for an envelopment movement starting at mobilization day plus ten days around the pivot point of Metz-Diedenhofen. The forces north of it consisting of First, Second, and Third Army are the designated right wing. *Aufmarsch 1913/14*, deployment and mobilization plan printed in Ehlert, Epkenhans, and Gross, *Der Schlieffenplan, Analysen und Dokumente*, 480.

¹⁶ US Department of the Army, Army Doctrine Reference Publication 6-0, *Mission Command*, v.

analysis are German capstone manuals of the period, the war plan *Aufmarsch 1913/14*, and the culture of the German Army prior to World War I, defined according to the terminology of US Army Mission Command.

As a second step, the third section analyzes the conduct of the opening weeks of the 1914 campaign and the interactions between First, Second, and Third Armies and Moltke's supreme army command against the above-mentioned framework and secondary literature about the topic. This part of the study assesses three key indicators through the identification of decision points, those points in space and time when key choices concerning a specific course of action occurred or should have occurred.¹⁷ Each decision point consists of an examination of the decisions taken qualitatively, based upon the application of the command philosophy of *Auftragstaktik* and the adaption of the command structure with respect to the question of whether the individual instances reflect professional judgment given the information available to the decision makers. In addition, the study reviews quantitative dimensions of interaction—the ability and will to communicate and the resulting available information and operational picture. It will analyze the decision points to trace back objectionable patterns that illuminate how the tension between the art of command and the science of control was resolved to their causes.¹⁸

Finally, the fourth section concludes with a comparative analysis of theory and practice of Mission Command in the first five weeks of World War I and provides the background for the deduction of lessons about the application of the art of command and the science of control.

¹⁷ The construct of decision points is a planning tool to anticipate where and when decisions have to be made. US Department of Defense, Joint Publication 5-0, *Joint Operations Planning* (Washington, DC: Government Printing Office, 11 August 2011), GL-8. By using it as means of historical analysis, the anticipation is replaced by an ex-post assessment defining when decisions had to be made.

¹⁸ For a description of the theoretical framework of the critical analysis and the use of historical examples, see Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 156-159, 170-174.

German Command Doctrine: Philosophy and

Culture on the Eve of World War I

At the same time, [early September 1914] . . . it was proved on the Marne that the age of armies numbering millions, with their improved armament and the widely extended fronts which they necessitate, engenders very special conditions.¹⁹

— Baron Hugo von Freytag-Loringhoven,
Deductions from the World War

When Lieutenant General Baron Hugo von Freytag-Loringhoven wrote these words in 1918, he had the benefit of hindsight having fought through four years of war. His account, while written with the purpose of drawing conclusions for the rebuilding of the German Army, provided a first-hand testimony of the mindset of a pre-war military leadership that, in its majority, was oriented more towards preserving the romantic glory of the wars of unification than towards analyzing the implications of warfare in the machine age. Lessons from the Boer and Russo-Japanese wars were mostly neglected as not being applicable for a large European war.²⁰ The analysis of Lieutenant General Balck's *Entwicklung der Taktik im Weltkrieg* (Development of Tactics in the World War) also shows the neglect of drawing lessons from the recent wars outside of Europe. Balck compared the preparedness of the German Army at the eve of the war with the state of the Prussian Army in 1806.²¹ Recently, Eric Dorn Brose, in *The Kaiser's Army*, described the struggles between conservative and modern military leaders over the utility of technological innovations like the recoilless gun, machine-guns, and semi-automatic rifles and their implications for the tactical employment of artillery, infantry, and cavalry.²² Multitudes of sources explain the interdependencies of the

¹⁹ Baron Hugo von Freytag-Loringhoven, *Deductions from the World War* (New York: G. P. Putnam's Sons, 1918), 95.

²⁰ Ibid., v-vi, 81-101.

²¹ William Balck, *Entwicklung der Taktik im Weltkrieg* (Berlin, Germany: Verlag von R. Eisenschmidt, 1922), 1-8.

²² Dorn Brose, *The Kaiser's Army*.

demise of Bismarck's alliance system, Emperor Wilhelm's erratic foreign politics, and the development of the Schlieffen concept.

As shown above, discussions about strategy and the tactical implications of technological developments took place in the German Army. Notably, an assessment of their effects on what is today called the operational level seems to be missing. This section focuses on an analysis of the doctrinal framework in place at the outbreak of World War I, specifically on the descriptions of the rules for command philosophy, command structure, and communications. Due to the lack of pre-war operational level discussion, the analysis has to go as far back as the first manual for the operational level, the *Instructions for Large Unit Commanders*, published in 1869.

Reprinted in 1885 and 1910 with minor changes, the manual covered the echelons from division up to the field army; its principles shaped the German Army's understanding of the command of large units well into the 1930s.²³ Drafted by junior General Staff Officers, the writing process was closely monitored and the draft was in parts intensively edited by the Chief of the Prussian General Staff, Helmut Karl Bernhard von Moltke (the Elder), before it was submitted to the king.²⁴ Relevant examples of intensive editing by the field marshal himself are Chapter I—General Remarks and Chapter VI—Command and Control. The overall style of both editions of the manual was descriptive, providing an understanding of the nature of the phenomenon of large unit warfare and only prescribing action when a fundamental rule was applicable in all circumstances.

Chapter I—General Remarks pointed out the difficulties of the command of large units as described by the Clausewitzian concepts of the human factor in war and friction. It

²³ Moltke, "Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869," 175-176; Daniel J. Hughes, ed., *Moltke, On the Art of War, Selected Writings*, trans. Daniel J. Hughes and Harry Bell (New York: Random House, 1993), 171-172. The 1910 edition, named essentials of higher troop command explicitly stated at the beginning of the manual that applicable parts written by field marshal Moltke had been retained. Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 4.

²⁴ Moltke, "Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869," 167-169.

described how danger, deprivation, and suffering affect the decisions and reports of commanders in the front and how available information gets less complete and reliable the higher up in the chain of command. In addition, the period available for making a decision that can be effective on the ground in time becomes more condensed.²⁵

Consequently, the manual described the tension between initiative of commanders and the unified control over large units. While commanders at every level were obliged to restore the communications with their superior during periods of disruption, the manual pointed out that “[t]here are many situations in which the officer must act according to his own judgment. It would be absurd if he waited for orders in moments where often no orders could be given. As a rule, however, his work is the most profitable for the whole when he carries out the will of his superior.”²⁶

Chapter II—Leadership of the 1910 edition handed the responsibility for a unified effort of different armies to the commanders at the army level. They were obliged to act within the intent of the supreme commander. The manual postulated that only army commanders who permanently considered this framework could help to overcome the inherent difficulties of the control of mass armies. On the next page, however, it qualified this rule by a reference to the importance of a tactical victory in relation to the general mission. For commanders of smaller units, the “old rule of marching towards the sound of the guns”²⁷ remained standing guidance. Higher commanders were to analyze the consequences of their decision on the overall aim—outflanking, envelopment, and annihilation of the enemy.²⁸

²⁵ Moltke, “Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869,” 171-172. Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 7-10.

²⁶ Moltke, “Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869,” 174. The 1910 version stated, “Where subordinate leaders wait for orders the opportunity of the circumstances will never be utilized.” Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 13.

²⁷ Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 17.

²⁸ *Ibid.*, 16-18.

The chapter on command and control stressed the necessity that higher commanders concentrate on their function and do not interfere with their subordinate's responsibilities by directing details that fall into their realm. To provide for the ability to give appropriate orders, subordinates were unconditionally duty bound to inform their chain of command in a realistic manner of the situation on the ground, especially the results of battles, and encouraged the exchange of information about adjacent units. The manual also described the use of liaison parties, including General Staff Officers if required, to facilitate the flow of information from subordinate units.²⁹

The 1910 edition added to these rules by referring to the new technological communication technologies—the telegraph, wireless radios, telephones, motor vehicles, and dirigibles. It recognized the vulnerabilities of those means, recommending their use with redundancy. It also recommended that command posts remain at known locations as long as possible to maximize their effectiveness. Fighting units, although bound by their own interest to reporting their situation, were relieved from the responsibility to ensure the information flow. Instead, higher headquarters and adjacent units were encouraged to pull required reports by detaching liaison officers, with personnel available being the only limitation.³⁰

The 1869 *Instructions for Large Unit Commanders* depicted the result of a reform process that originated from the crushing defeat of the Prussian Army at Jena and Auerstedt, in 1806. The growth of armies to unprecedented sizes had created the need for dispersed movement of large units before concentration at the decisive battle. Increasing firepower of both artillery and infantry required more and more dispersion of units in the battle. This process of change in the Prussian Army included not only the introduction of new doctrinal principles, but also the creation of the General Staff, the introduction of higher education for

²⁹ Moltke, "Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869," 179-182. Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 50-53.

³⁰ Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 49-50, 52, 57-58.

officers, and changes in force structure, equipment, drafting system, and many other aspects.³¹

Historical case studies selected as exemplary by the Prussian General Staff for publication in Volume 4 of Moltke's *Militärische Werke* provided a deeper insight for the full comprehension of the philosophy standing behind the dry words on initiative versus control, written in the *Instructions for Large Unit Commanders*. They served as study materiel for the generations of officers growing up without their own combat experience.³² Moltke portrayed initiative based upon independent decisions of commanders as an important value in itself, even without regard to the outcome of the action. The aim of the historical examples was to foster initiative within the ranks, without fear of judgments made in hindsight.³³

The actions of General Steinmetz, Commander First Army, in the Franco-Prussian War best exemplify the tension between initiative and control. To envelop and strike the flank and rear of French forces fixed by Second Army, the German command tasked Steinmetz to cross the Saar River and concentrate at the right of Second Army. Instead of conducting this enveloping movement, Steinmetz moved in on the French at Spicheren on the direct line, thus blocking the advance routes reserved for the Second Army and separating its main body from the advance elements.³⁴ This caused a logistical nightmare and ruined the plans for a

³¹ For a detailed description of the change process, see Craig, *The Politics of the Prussian Army 1640-1945*, Chapter 2-4.

³² Volume 4 of Moltke's *Militärische Werke* was assembled and published by the military history section of the General Staff. Although there is no proof of Moltke's personal involvement or his specific selection of historic case studies the work expresses the official history respecting the official thought of exemplary doctrinal behavior. They are specifically valuable for an analysis of the contemporary understanding of *Auftragstaktik*. For details, see Hughes, *Moltke, On the Art of War*, 15-17.

³³ Martin Sonnenberger, "Initiative within the Philosophy of Auftragstaktik, Determining Factors of the Understanding of Initiative in the German Army 1806-1955" (Master's thesis, US Army Command and General Staff College, Ft. Leavenworth, KS, 2013), 22-28.

³⁴ Hughes, *Moltke, On the Art of War*, 79-80; Geoffrey Wawro, *The Franco-Prussian War, The German Conquest of France in 1870-1871* (New York: Cambridge University Press, 2003), 108.

Kesselschlacht closely behind the French border. Nevertheless, the analysis of the historical case study took extensive efforts to explain that the royal command's, hence Moltke's, change from general directives to direct orders was required by the necessity of the combined advance of the armies that could only be coordinated by the king. In addition, the study pointed out that the direct orders were only justified by the need to coordinate their movements, but that latitude in the execution of the orders by the army commanders was, as a general rule, not to be limited.³⁵

No judgment about the often-criticized Steinmetz can be found, although the various occasions of explaining the concept of operations to him are stressed.³⁶ Over the following days, Moltke made intensive efforts to ensure that the directions and roads assigned to the different armies would be ordered and changed only by royal command.³⁷ Hence, he showed the flexibility to control closely commanders he could not trust.

Describing the events accompanying the battle Columbey-Nouilly on 14 August 1870, the case study explained again the need to coordinate the operations of the First and Second Army. General Steinmetz's now much more passive and defensive conduct of operations was described in a very balanced way. Steinmetz's attempt to preserve his independence by hiding the position of his headquarters was the only point of obvious criticism.³⁸ The case study depicted the intensive interaction between Second Army and the

³⁵ An analysis of the orders issued during the early stages shows that the change from directives to orders tended to result in directly tasking the corps level. Occasionally the orders were in addition to informing the respective army headquarters directly sent to the corps itself. It remains unclear whether this meant a direct command and control relationship to the royal headquarters or was a result of the limitations of telegraph and messenger communications. Preußisches Kriegsministerium, *Extracts from Moltke's Military Correspondence Pertaining of the War of 1870-71*, ed. Historical Section of the Prussian General Staff, Berlin 1896, translated by Harry Bell (Ft Leavenworth, KS: CGSC Library, 1910).

³⁶ Hughes, *Moltke, On the Art of War*, 79-80.

³⁷ Preußisches Kriegsministerium, *Extracts from Moltke's Correspondence*, No. 112, No. 125, No. 127.

³⁸ Hughes, *Moltke, On the Art of War*, 82-83. Steinmetz's actions are inconclusive, while requesting to advance closer to Metz he neglected to push his advance guards up front

royal headquarters during and following the battle of Mars-la-Tour and Vionville in contrast, as exemplary.³⁹ It included direct tactical control—“[b]ecause of the gravity of the situation had become clear, his majesty the king decided to proceed to the battlefield with his entire staff early on August 17”⁴⁰—of the different corps engaged in the battle.⁴¹ For the following pursuit, the case study stated, “all German armies received only general directives. The broad freedom of action, which previously could be granted only to the Third Army, and which had to be more or less curtailed in the cases of the First and Second armies after August 11, was restored.”⁴²

The case study described the pursuit of the French towards Sedan and the following months more superficially as interplay between independent operations and “[d]irect orders from the royal headquarters [that] restricted the freedom of decision of the commanders only when the king’s views were not carried out, or when reports of enemy activities made direct intervention unavoidable.”⁴³ There seems to have been no further friction between the royal headquarters and the subordinate commanders worthy of mention to explain the nature of the command relationship.

An additional useful resource to explore the German understanding of the implications of initiative and coordination can be found in the *Exerzier-Reglement für die*

and when one of his divisions engaged the withdrawing French at Columbey he ordered them to break off combat. This inconclusiveness however may have been caused by very ambiguous orders by Moltke, which stated that a close coordination with Second Army was necessary, the concentration was not to be executed before the positions of the French were known and a passage of First Army north or south of Metz was to be expected. See Preußisches Kriegsministerium, *Extracts from Moltke’s Correspondence*, No. 137; Wawro, *The Franco-Prussian War*, 146-147.

³⁹ Hughes, *Moltke, On the Art of War*, 83-84.

⁴⁰ *Ibid.*, 84.

⁴¹ Preußisches Kriegsministerium, *Extracts from Moltke’s Correspondence*, No. 177-180.

⁴² Hughes, *Moltke, On the Art of War*, 84.

⁴³ *Ibid.*, 87.

Infanterie (Infantry Drill Regulations) that were updated in 1906. They continued the trend towards individualization of the soldier on the battlefield and independent action of smaller units. *Auftragstaktik*, in a form comparable to the current German Army's understanding, was defined:

Orders (*Anordnungen*) given from rearward commands will easily be made obsolete by the events. **Timely action** is often only possible upon **independent decision**. The lower command units though have to observe that they are destined to solve the tactical problem (*Gefechtsaufgabe*) **as intended by the higher commander**. [original emphasis]⁴⁴

The manual described in more detail the tension between the aim of unified control and the necessity of leaders at all levels to seize the initiative in the absence of orders, more so than in the *Instructions for Large Unit Commanders*.

The foremost quality of a leader remains the **willingness to take responsibility** (*Verantwortungsfreudigkeit*). It would be understood falsely, if one aimed at making arbitrary decisions with disregard of the whole or not precisely following given orders and let know-all manner take the place of obedience.

But in the cases in which the subordinate has to say to himself that the ordering person could not sufficiently oversee the circumstances or where the order has been rendered obsolete by the events, it becomes an obligation of the subordinate not to obey but to alter the execution of orders received and report this to the superior. The full responsibility for not obeying the order remains with him.

All leaders have to constantly stay aware and inculcate in their subordinates that **forbearance and dereliction weigh heavier than mistaking in the selection of an action**. [original emphasis]⁴⁵

The independence of subordinate leaders however, was to be limited; their risk of getting into arbitrariness was pointed out, while their autonomy is seen as a prerequisite for success.⁴⁶

In his military historical illustrations of the 1906 regulations, the Chief of the History Section of the Prussian General Staff, Hugo Friedrich Philipp Johann von Freytag-Loringhoven, focused mainly on the employment of forces using the new battle tactics required by the increased firepower of late nineteenth century weapons. Reinforcing

⁴⁴ Preußisches Kriegsministerium, *D.V.E. Nr. 130 Exerzier-Reglement für die Infanterie*, 126a.

⁴⁵ *Ibid.*, 90-91.

⁴⁶ *Ibid.*, 84.

Instructions for Large Unit Commanders, he underlined the need for proper orders, which reflect the intent and coordinate the movements of cooperating units, as well as the need for precise reporting and proper communications.⁴⁷ He included a single case study focused on the difficulties of maintaining communications with the higher echelons of large units. While the limitations of the influence of higher commanders from the rear was acknowledged as a fact of mobile warfare, the use of telephones and optical signals was encouraged as soon as operations became more stationary.⁴⁸ In addition, the publication mentioned the necessity of a balance between independently acting leaders and a cohesive and coordinated conduct of operations. However, this was obviously considered a given, not important enough to clarify with historical examples.⁴⁹

Gerhard P. Gross, in his recent detailed study about the history of operational thought in the German Army, described the understanding of the balance of the art of command and the science of control in terms of a Clausewitzian dialectic. Moltke (the Elder's) directive to the Second Army for the invasion into Bohemia in 1866 exemplifies one extreme. "From the moment they face the enemy, the army commands have to utilize their units according to their own discretion and the requirement of the situation, thereby also factoring in the conditions of the adjacent armies."⁵⁰ Schlieffen's aim to eliminate friction through diligent planning, on the other hand, idealized the image of the higher commander sitting in a central position and commanding his forces utilizing telephones. This restrained freedom of action for the

⁴⁷ Hugo Friedrich Philipp Johann Freytag-Loringhoven, *Das Exerzier-Reglement für die Infanterie vom 29. Mai Kriegsgeschichtlich Erläutert* (Berlin, Germany: Ernst Siegfried Mittler und Sohn, 1906), 105-106, 40-41.

⁴⁸ Freytag-Loringhoven, *Das Exerzier-Reglement für die Infanterie vom 29. Mai Kriegsgeschichtlich Erläutert.*, 40-41.

⁴⁹ *Ibid.*, 106, 256-257.

⁵⁰ Helmut Karl Bernhard von Moltke, "Moltke an das Oberkommando der 2. Armee, Berlin, 22.6.1866" in *Moltkes Militärische Werke, Zweiter Theil, Die Tätigkeit als Chef des Generalstabs im Frieden*, ed. Preußischer Generalstab (Berlin, Germany: Ernst Siegfried Mittler und Sohn, 1900), cited in Gerhard P. Gross, *Mythos und Wirklichkeit, Geschichte des operative Denkens im deutschen Heer von Moltke d.Ä. bis Heusinger* (Paderborn, Germany: Ferdinand Schöningh, 2012), 40.

operational level. Given the limited ability of the higher commander to influence the battle once it had started, Schlieffen stressed that the responsibility for orders and actions by subordinate commanders took precedence once they acted upon their own initiative.⁵¹

Schlieffen's ideal of central command and coordination via telephone would have required focused research of modern means of communications. That was not the case in the German Army. It initially saw the telegraph solely as a means to coordinate its strategic deployment in accordance with the railroad plans. As soon as the armies entered enemy terrain, their own lines were no longer directly available and sufficient capabilities for connections of moving or maneuvering forces did not exist.⁵² Informed by the experiences of British and French officers in the Crimean War, when capitals had micromanaged fielded forces through the telegraph, Moltke (the Elder) had explicitly warned about the negative influence of the telegraph on the initiative of commanders on the front.⁵³ When World War I started, however, the German armies and army corps had signal detachments. The culturally based independence of commanders seemed to reduce their use as much as the technical difficulties to link the quickly advancing units with their superior headquarters.⁵⁴

In summary, the analysis of the German Army's doctrine, philosophy, and culture reinforces the wisdom that armies tend to prepare to fight the last war instead of the next. When the Schlieffen concept became the military paradigm in the early twentieth century, apparently no discussion of the operational level implications of the shift from an operational level force centric approach, to a strategic level envelopment took place. Doctrine described the tension between the execution of initiative and the need for coordinated action, but only

⁵¹ Gross, *Mythos und Wirklichkeit*, 81-84.

⁵² Geoffrey L. Herrera, "Inventing the Railroad and Rifle Revolution: Information, Military Innovation and the Rise of Germany," in *Information and Revolutions in Military Affairs*, ed., Emily O. Goldman (New York: Routledge, 2005), 61-62, 64, 71.

⁵³ Dennis Showalter, "Soldiers into Postmasters? The Electric Telegraph as an Instrument of Command in the Prussian Army," *Military Affairs* 37, no. 2 (April 1973): 49.

⁵⁴ E. Brun, "Führung und Übermittlung," *Schweizerische Militärzeitschrift* 127, Heft 7 (1961), accessed July 7, 2014, <http://dx.doi.org/10.5169/seals-39312>, 305.

partly assigned responsibilities for the resolution of this issue. Technological innovations in the field of communications were identified, but not prioritized in procurement. Caught in a culture which glorified past successes, the balance between the initiative of subordinate commanders and coordination and control by the superiors—the art of command and the science of control—was not the subject of deeper analysis. Consequently, the German Army, in stark contrast to its meticulous war planning, was ill prepared to execute mission command at the outset of World War I.

Execution of the Advance Towards Paris

3 August to 9 September 1914 From a Mission Command Perspective

The highest authorities above all lack time for calm reflection, and, just as frequently, the certain evidence that alone allows full insight into the prevailing situation. The reports that should form the basis for such full insight are sometimes insufficient, perhaps contradictory, or even entirely absent. They exaggerate danger on the one side or overlook it on the other. They may intentionally or unintentionally be misrepresentative, and they will more or less always reflect an individual interpretation. From such surrounding darkness what is correct must be discovered (often will only be guessed at), in order to issue orders. In the path of the execution of these orders enter incalculable chance and unforeseeable hindrances.

But in this fog of uncertainty at least one thing must be certain: one's own decision. One must adhere to it and not allow oneself to be dissuaded by the enemy's actions until this has become unavoidably necessary.⁵⁵

— Helmut Karl Bernhard von Moltke,
Instructions for Large Unit Commanders

After the description of the theoretical background to the German equivalent of the US Army Mission Command doctrine, the analysis now turns to its execution in the opening weeks of World War I. The quote out of the initial edition of the *Instructions for Large Unit Commanders*, restated almost identically in the 1910 edition, very precisely describes the difficulties faced by the commanders, the advancing armies, and Helmuth von Moltke (the Younger) in the German supreme command—*Oberste Heeresleitung* (OHL). Continuing to utilize US doctrine as the descriptive lens, this section identifies decision points—points in space and time when key choices concerning a specific course of action occurred or should have occurred. For each decision point, commander's critical information requirements, consisting of enemy-oriented priority information requirements and friendly force information requirements, are identified and analyzed.⁵⁶ This analysis follows Clausewitz's

⁵⁵ Moltke, "Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869," 171-172. Translation as in Hughes, *Moltke, On the Art of War*, 173. Deutsches Kriegsministerium, *D.V.E. Nr. 53. Grundzüge der höheren Truppenführung*, 8.

⁵⁶ The construct of decision points is a planning tool to anticipate where and when decisions have to be made. US Department of Defense, Joint Publication 5-0, *Joint Operations Planning*, GL-8, III-37. By using it as means of historical analysis the anticipation is replaced by an ex-post assessment defining when decisions had to be made.

recommendations on the use of historical examples. It traces the circumstances of the individual decisions and shows to what degree they are objectionable, thereby establishing possibilities of the phenomenon as basis for the comparative assessment of theory and practice in the next section.⁵⁷

When Emperor Wilhelm II declared a state of danger of war on 31 July 1914, the machinery of the deployment planning sprang into action. The detailed planning of the railway schedules of *Aufmarsch 1913/14* provided the German Army with an instrument that did not require additional planning and decisions, but that also did not allow for interferences with the mobilization process.⁵⁸ Holger Herwig best describes the dimensions of the deployment:

In 312 hours, roughly eleven thousand trains shuttled 119,754 officers, 2.1 million men, and six hundred thousand horses to the various marshaling areas under stage seven (“attack march”) of the Military Travel Plan. The 1.6 million soldiers of the west army—950 infantry battalions and 498 cavalry squadrons—rolled across the River Rhine bridges at a rate of 560 trains, each of fifty-four cars, per day at an average speed of thirty kilometers per hour.⁵⁹

The right wing of the German Army consisted of three field armies that each fielded four corps of wartime strength of over forty thousand soldiers, fourteen thousand horses, and twenty-four hundred supply wagons. A marching corps required fifty kilometers of road space and consumed about 130 tons of food and fodder per day.⁶⁰

“[T]his strength must be guided by the intelligence of the commanders, who bear greater responsibility the higher they stand. They must make the most difficult decisions under conditions of physical exertion, mental excitement, deprivation, and suffering. Their

⁵⁷ Clausewitz, *On War*, 171-172.

⁵⁸ Herwig, *The Marne, 1914*, 48.

⁵⁹ Ibid.

⁶⁰ Ibid., 46.

decisions must be clearly and exhaustively communicated.”⁶¹ The quote from both the 1869 and 1910 manual for higher commanders directly precedes the epigraph of this section in their source manual and hints at the importance of the commanders’ personalities.

Helmuth Johannes Ludwig von Moltke (the Younger) was appointed Chief of the General Staff, and thus acting commander on behalf of the Emperor, in January 1906. Born in 1848, he had gained combat experience in the Franco-Prussian War, attended the *Kriegsakademie*, and had been the personal adjutant of Emperor Wilhelm II. His appointment caused some shock with the senior army commanders and the reason for his selection remains disputed. A decent, honest, and earnest person, he lacked the ambition, drive, and the *coup d’oeil* of the great commanders, and additionally possessed a pessimistic, spiritual side in his personality. He himself was concerned whether he possessed the personality to be a successful supreme commander, describing himself as too reflective, too conscientious, and too scrupulous.⁶²

Alexander Heinrich Rudolph von Kluck, commanding the First Army at the extreme right wing, was assigned the role of the hammer that would turn the French and British flank and drive the enemy against the anvil of the German forces in Lorraine. From non-Prussian, non-noble heritage, he was two years older than Moltke, and had fought in both the Austro-Prussian and Franco Prussian War. He had advanced in rank due to merit, mostly in command positions, and was rewarded with a patent of nobility in 1909. Herwig describes him as “fierce looking and self assured almost to the point of arrogance.”⁶³

⁶¹ Moltke, “Aus den Verordnungen für die höheren Truppenführer vom 24. Juni 1869,” 171-172. Translation as in Hughes, *Moltke, On the Art of War*, 173. Deutsches Kriegsministerium, D.V.E. Nr. 53. *Grundzüge der höheren Truppenführung*, 8.

⁶² Herwig, *The Marne, 1914*, 41-42; Correlli Barnett, *The Swordbearers, Supreme Command in the First World War* (New York: William Morrow and Company, 1964), 4, 34-36.

⁶³ Herwig, *The Marne, 1914*, 118-119; Kluck, *The March on Paris and the Battle of the Marne*, xi-xii.

Adjacent to von Kluck, Second Army, with its commander Karl Wilhelm Paul von Bülow, was deployed. Bülow, born into an old Mecklenburgian noble family in 1846, also had combat experience out of both of the wars of unification. After that, he had risen through the prestigious command of the 4th Foot Guards, a position as a department head at the war ministry, and as Schlieffen's deputy in the General Staff. Described "more as a genial uncle than the fierce warrior,"⁶⁴ he seemed to have had not only a contrasting background compared to Kluck, but also a different personality.⁶⁵

Max Clemens Lothar Freiherr von Hausen commanded Third Army, the southernmost army on the pivot wing. He was entrusted by the Saxon King with command over the Royal Saxon Army that became the Third German Army for the war. Born in 1846, he had fought against Prussia in the Austro-Prussian War when Saxony had been an Austrian ally. He had taught at the Saxon Military Academy, commanded a corps in peacetimes, and served as the Saxon War Minister until 1914. Third Army, employed as the spoke of the wheel, had a twofold mission, supporting Second Army and maintaining the link with Fourth Army, south of the hub at Metz-Diedenhofen.⁶⁶

The supreme army headquarters—*Oberste Heeresleitung* (OHL)—had organized and monitored the mobilization from its peacetime station in Berlin. OHL did not resemble anything like a modern wartime headquarters, but was a mere renaming of the General Staff. Its span of control consisted of the seven armies at the western front and the Eighth Army in East Prussia. Although the Emperor, as the supreme commander, officially led the war effort, naval operations were not integrated in the headquarters. The OHL lacked sufficient telecommunications to the armies deployed into Belgium and France. The eastern theater was

⁶⁴ Herwig, *The Marne, 1914*, 119.

⁶⁵ Ibid.

⁶⁶ Ibid., 119-120.

linked through the civilian telephone net, which was more capacious, but the long distance calls were stricken with low quality and interruptions.⁶⁷

The role of the OHL as a whole is, in modern terms, best described, as that of a land component command with a representative staff of the responsible political decision makers attached to it. Prior to the war, Moltke had been aware of the limitations of his ability to control the fight stating:

The Supreme Command's heavy task will consist in making a picture of the general situation with the aid of scanty and inaccurate information. . . . But if the inevitably separate battles of the different armies lead to general loss of cohesion because every army follows its own objectives instead of working together, then the Supreme Commander will have let reins fall from its hands, it will not have known how to create the basic unity in the battles and manoeuvres of separate groups.⁶⁸

Additional strain was put on Moltke's shoulders by his concern to keep the Emperor, whose amateurism in military matters Moltke found alarming, away from operational control of the war. This influenced the decision to retain the OHL at Koblenz where it had moved on 17 August, 250 kilometers away from the decisive effort on the right wing.⁶⁹

The selection of decision points for analysis is subject to similar considerations as in the planning process for an operation. On the one hand, those decisions have to be "key";⁷⁰ they have to stand out against the background of the multitude of decisions to be made in the daily execution of an operation. On the other hand, a too selective standard would restrain the historical analysis, as much as it would hinder a planning staff considering branch plans.

⁶⁷ Herwig, *The Marne, 1914*, 120-121; Barnett, *The Swordbearers*, 50, 60-61. Mark Osborne Humphries and John Maker, eds., *Germany's Western Front, Translations from the German Official History of the Great War* (Waterloo, Canada: Wilfrid Laurier University Press, 2013), 123-125.

⁶⁸ Wolfgang Förster, *Le Comte Schlieffen et la Guerre mondiale. La Stratégie allemande pendant la Guerre de 1914-1918* (Paris: Payot, 1929), 31, cited in Barnett, *The Swordbearers*, 61.

⁶⁹ Herwig, *The Marne, 1914*, 120, 122.

⁷⁰ US Department of Defense, Joint Publication 5-0, *Joint Operations Planning*, GL-8.

In accordance with the focus of this work, the analysis omits the strategic decisions that lead into World War I, as well as the different considerations for the war plan. The clockwork-like execution of the deployment of the forces, vividly described by Holger Herwig,⁷¹ not only did not require, but in fact did not allow, for commanders interference through individual decisions. From 8 August to 9 September 1914, seven key decisions were made or should have been made by the commanders introduced above, all of them requiring some sort of interaction between them.

Table 1. Overview of Decision Points

DP No.	Date	Type of Decision
1	8 Aug	Continue assault on Liège or march through Netherlands
2	22 Aug	Tactical support or strategic turning movement
3	23 Aug	Tactical support or strategic turning movement
4	27 Aug	Tactical support or strategic turning movement
5	30 Aug	Direction of attack
6	3 Sep	Flank Protection
7	9 Sep	Withdraw to defensive position

Source: Created by author.

The decision points will be analyzed critically to trace objectionable patterns that illuminate how the tension between the art of command and the science of control was resolved to their causes.⁷² Variables consist of the information available to the different actors, their ability to interact, the application of the command philosophy of *Auftragstaktik*, and the adaption of the command structure with respect to the question, whether the individual instances reflect professional judgment, given the information available to the decision makers.

⁷¹ See page 18.

⁷² For a description of the theoretical framework of the critical analysis, see Clausewitz, *On War*, 156-159.

Decision Point 1

After Belgium had rejected the call for free passage, the German war plan *Aufmarsch 1913/14* required the three armies of the right wing to open the sixteen-kilometer-wide Liège Gap between the Ardennes forest and the Dutch-Belgian Border covered by Belgian fortresses before they wheeled into France. The contingency, in case the gap could not be opened in a timely manner, was an invasion into the Netherlands. This would have destroyed the hope that the neutral Netherlands could be persuaded to serve as a way to import strategic resources through the blockade, assumed to be set up by Great Britain.⁷³ Liège guarded the crossings over the Meuse River and the gap was a strategic west-east axis that encompassed the rail lines from Germany to Brussels and Paris. As such, the Belgian Army had fortified it with a network of sophisticated underground concrete fortifications that formed a formidable obstacle to attacking armies. To avoid the time required for a siege operation and reduction of the forts, the German General Staff had planned for a *Handstreich*—a coup de main to seize the fortresses against an expected garrison force of up to nine thousand defenders. When the German advance units approached Liège on 4 August, they were bloodily repulsed by the Belgians that numbered 30,000 garrison and field army troops.⁷⁴

The battle that flared up during the next three days brought only very limited tactical success for the Germans. X Corps, part of Bülow's Second Army, had taken a single fort and the units fought isolated battles in and around the city as supplies became scarce. Information about the battle was contradictory; on the one hand, the surrender of the citadel to Major General Erich Ludendorff and the 14th Infantry Brigade caused triumphant reactions, while on the other, wild rumors caused fear of catastrophic failure. Neither Second Army nor the OHL in Berlin received sufficient information from X Corps because the corps had no

⁷³ Herwig, *The Marne, 1914*, 105-108, 43; Barnett, *The Swordbearers*, 17.

⁷⁴ Herwig, *The Marne, 1914*, 107-110.

communications detachment; neither headquarters had a clear picture of the tactical situation on the ground.⁷⁵

On 8 August, Moltke at the OHL had two different options. He could continue the siege operation until the heavy artillery could be brought up to reduce the fortifications or execute the branch plan based on bypassing Liège and breaking Dutch neutrality. In addition to precise and current information on the tactical battle in and around Liège, information on the availability of the heavy siege artillery was required to make this decision. While the first element can, at best, be described as shaky, it was clear that the siege artillery would take four more days to arrive. Interestingly, although the decision had huge strategic implications, the OHL does not seem to have made it. Bülow, with Moltke's consent, took charge of the fight, doubled the number of attacking troops, stopped the senseless and bloody assault attempts, and waited for siege artillery that reduced the forts one by one between 12 and 16 August.⁷⁶

This decision point incorporates several interesting aspects. In terms of information, the minimum requirements were fulfilled, but the deficiency of the communications to the employed units became obvious. While lacking a detailed assessment of the situation on the ground, the overall military situation this early in the war was clear, as was the information on the availability of the siege artillery. Interestingly, despite its strategic implications, the decision seems to have been entrusted to the operational leader closest to the battle. It remains unclear whether what Herwig describes as “with Moltke's consent”⁷⁷ indicates collaborative decision-making, a suggestion by Bülow, or a decision made by Bülow, followed by Moltke's consent after the fact. The decision point shows the willingness of Bülow to take the responsibility for exercising disciplined initiative within Moltke's intent—hence the functioning of the art of command. As described in US Army Mission Command, the subordinate acts to counter an unforeseen threat—the delay of the rapid German advance

⁷⁵ Herwig, *The Marne, 1914*, 110-115.

⁷⁶ *Ibid.*, 114-117.

⁷⁷ *Ibid.*, 115.

through Belgium—and to develop the situation. Within today’s understanding of strategic risks, an operational level commander taking a similar risk on his own is outside of the realm of the conceivable. In the German pre-World War I environment however, operational necessities had long taken precedence over tying ways to an end.

Decision Point 2

On 17 August, Moltke, just arrived with the OHL at Koblenz, issued a new directive for the advance through Belgium. More precise than the previous general instructions at the beginning of the war, it aimed at turning the Belgian flank away from the fortified city of Antwerp. First and Second Army were to attack abreast. First Army was also responsible for flank protection against bypassed Belgian forces. Commander, Second Army, Bülow, received overall command of the two armies.⁷⁸ This was a deviation from the initial war plan; the general instruction had not established an overall commander, stating that the pace of First and Second Army were to regulate the pace of the whole advance of the German right wing.⁷⁹

Apparently, the commanders did not discuss the change in the command structure and Moltke’s intent had when ordering it. Kluck, acknowledging the difficult tactical situation of Second Army in the center of the right wing, argued nevertheless in his book later that it was a bad decision if one considered First Army’s “situation pre-eminently strategical in its aspects.”⁸⁰ At a conference in Namur on 17 August, there was an opportunity for the key

⁷⁸ It had been intended that Bülow would exercise command over all three armies of the right wing but the fact that Commander Third Army, von Hausen, was senior to Bülow and not Prussian made this impossible. As a consequence, Bülow was to protect the unity of operations with Third Army through mutual agreement. See Osborne Humphries and Maker, *Germany’s Western Front, Translations from the German Official History of the Great War*, 153.

⁷⁹ General instructions by the OHL for the deployment into Belgium cited in Kluck, *The March on Paris and the Battle of the Marne*, 9-10. OHL directive for the advance after the fall of Liège, issued on 17 August, cited in Kluck, *The March on Paris and the Battle of the Marne*, 21.

⁸⁰ *Ibid.*, 22.

leaders of First and Second Army to reconcile their different views on the operational versus strategic role of their units, but this discussion apparently did not take place.⁸¹

The unresolved issue of the roles of the two armies and Kluck's anger about tasks issued by Bülow to Kluck's corps in the next days laid the foundation for poor cooperation on several occasions during the following weeks. The first of these occasions was the encounter of the German right wing with French and British forces in the Battle of the Frontiers on 22 August. The three armies had approached the river Meuse-Sambre area in a wide arc open to the southwest. Opposing them was the French 5th Army, with known positions on the western bank of Meuse and Sambre, and north of it, troops of the British Expeditionary Force (BEF), whose whereabouts were not known to the Germans. OHL and Commander, First Army suspected the British were fifty kilometers east of First Army's right flank in the area of Lille.

Kluck planned to continue his attack to the southwest, in accordance with his initial task to outflank the British and French left and thus protect the right flank of the German Army. Bülow was concerned with mutual support of the armies and intended an attack of Second Army against the French 5th Army, with the support of flanking pincers from both First and Third Army, if required. To this end, he ordered First Army and informed Third Army to use 22 August to get into assault positions for an attack on 23 August.⁸²

⁸¹ Kluck, *The March on Paris and the Battle of the Marne*, 21-22; Barnett, *The Swordbearers*, 31-33; Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 136-137.

⁸² Kluck, *The March on Paris and the Battle of the Marne*, 36-39; Osborne Humphries and John Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 156-162; Barnett, *The Swordbearers*, 44-45; Artur Baumgarten-Crusius, *Die Marneschlacht 1914 insbesondere auf der Front der deutschen dritten Armee* (Leipzig, Germany: Verlag der Akademischen Buchhandlung R. Mar Lippold, 1919), 20-21.

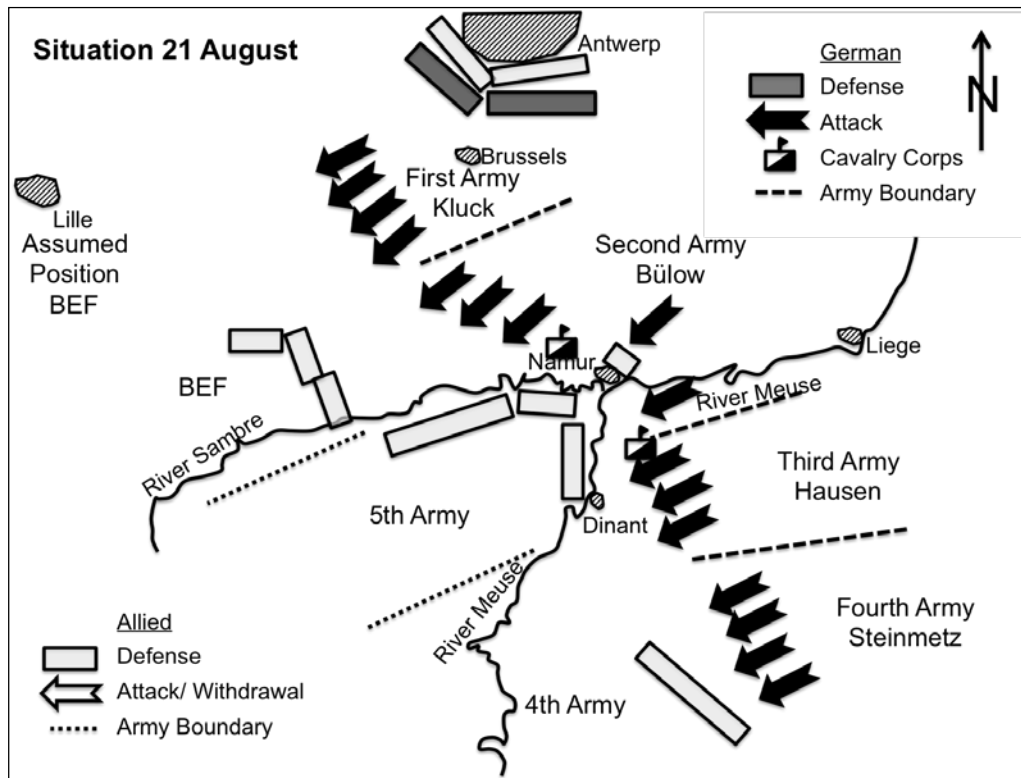


Figure 1. Situation of the German Right Wing prior to the Battle at Namur-Charleroi.

Source: Figure created by author using information from Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 154, 176.

The facts that the BEF was not in Lille, but in front of First Army and that the battle that unfolded on 22 and 23 August did not follow Bülow's plan does not matter to the analysis of the decision. Given the information available, command structure, and the authority to coordinate the operations of the three armies on the right wing, Bülow took the responsibility to attempt an operational level envelopment and defeat the French Fifth Army. His approach was well suited to achieve this aim, but as mentioned above, Kluck understood the mission of the right wing as aimed at a strategic envelopment. US Army Mission Command describes the principle of creating shared understanding of the higher commander's intent and the approaches to solving the operational problems. The decision point exemplifies the risk of operating in absence of a shared understanding about the operational approach.

Decision Point 3

In a ventured interpretation of the OHL order from 17 August, Kluck assumed that First Army, after crossing the Sambre, was no longer subordinated to Bülow. After the OHL clarified that the contrary was intended and demanded close coordination with Second Army, Kluck remonstrated on the cause of First Army's role and importance. The issue remained unresolved.⁸³ Bülow's attention had not only been consumed by the coordination with Kluck's First Army, but also by his neighbor to the left. The approach of Third Army towards the south-north streaming Meuse River would protect Second Army's left flank. The planned attack for 23 August had been coordinated and Third Army was advancing towards the river crossing at Dinant when Bülow requested a supporting attack of Third Army's right wing in the direction of Mettet, thirty kilometers to the northeast.

While Third Army's Commander Hausen was still planning for this assault to the northeast, he received information from his left neighbor, Crown Prince Albrecht, that suggested bypassing Dinant to the south and then attacking to the west would separate the French 4th and 5th Armies and allow for an encirclement of the latter. The night from 22 to 23 August saw Hausen contemplating how to resolve this dilemma and it was not until dawn with the attack on Dinant under way that Moltke ordered the attack to the south. As a result, Third Army was split into three and the chance for an operational level encirclement went unexploited, due to lack of fighting power and preparation of the individual groups.⁸⁴

⁸³ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 173.

⁸⁴ Herwig, *The Marne, 1914*, 162-166; Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 177-180.

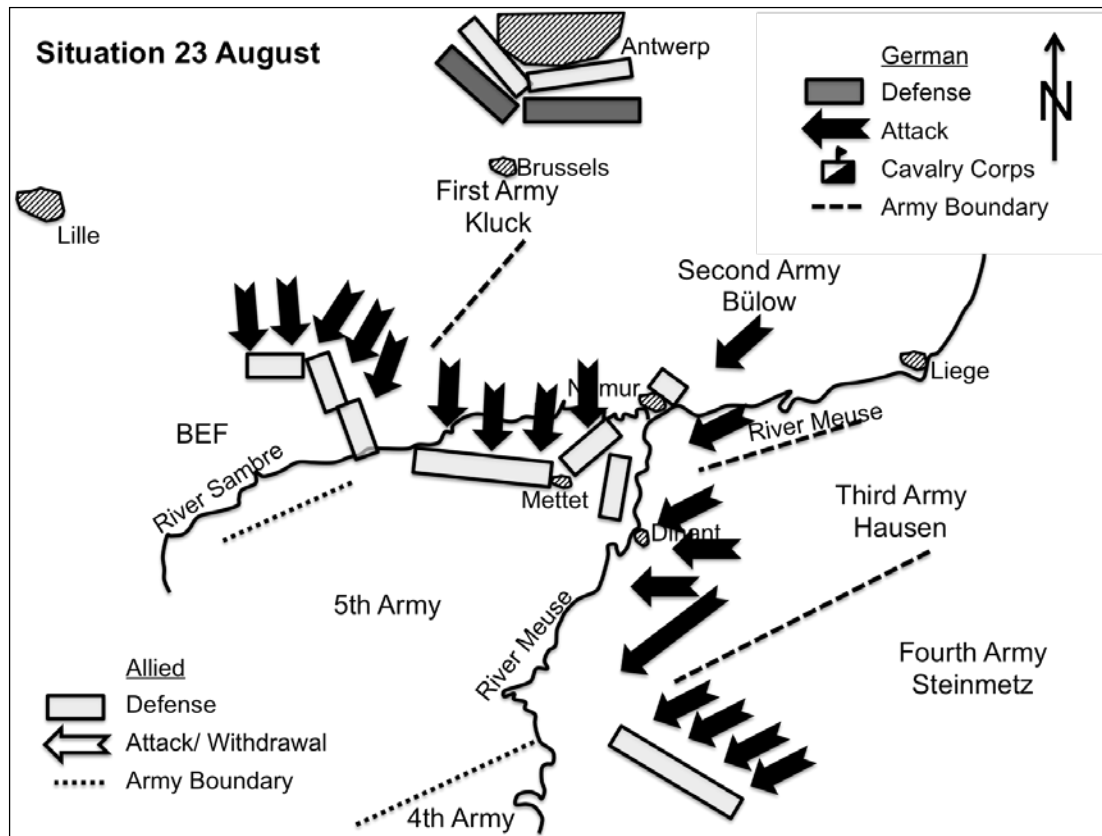


Figure 2. Situation of the German Right Wing prior to the Battle at Mons.

Source: Figure created by author using information from Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 154, 176.

Two factors caused Hausen's dilemma when facing this decision point. The first and foremost difficulty lay in emerging intelligence about the whereabouts of the French 5th Army. Secondly, even assuming perfect coordination of the right wing by Bülow, Third Army also had to maintain cohesion with the hub of the wheel represented by Fourth Army. Communications, although permitting overall coordination by Moltke, took ten and a half hours from the Army to the OHL and back, thus denying time for planning and preparation of Third Army to counter emerging intelligence.⁸⁵ Hausen's indecisiveness as to where to attack stood in contrast to the initiative shown by his fellow commanders on the right wing. Seizing

⁸⁵ Herwig, *The Marne, 1914*, 164; Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 179-180.

the initiative and exploiting opportunities is the foremost responsibility of a commander acting within the philosophy of both *Auftragstaktik* and US Mission Command. The example depicts that an operational framework that does not tie forces to competing purposes is one of the requirements for enabling initiative. Interestingly for analysis of the operational approach, as mentioned for decision point 2, is the fact that both Hausen and Bülow were following the objective of an operational level encirclement.

Decision Point 4

By 28 August, the German right wing had advanced further into northern France. The Battle of the Frontiers, costly for both sides and without operational encirclement, had forced the BEF and French 5th Army into a retreat towards the southwest. Reports from the army commanders reflected a euphoric assessment of the situation and an overestimation of the successes, not only from the right wing, but along the whole front. Although Moltke remained skeptical that this already constituted the quick blow against the French that would justify the shift of forces, he had on 27 August, stripped the right wing of two corps to reinforce the eastern front against the Russians.⁸⁶

Victory apparently in reach, Moltke issued a general instruction for the continuation of the campaign in the evening of 27 August. Deviating from the Schlieffen concept of a wheel aimed at outflanking the French and British forces and herding them against their fortifications, Moltke ordered all armies to commit to the offense against an obviously dislocated enemy in order to drive them in a southwesterly direction away from Paris.⁸⁷ His intent was to deny the adversary rest, the opportunity to reorganize, and the chance to strip the countryside of vital resources. For the right wing, the instruction detailed First Army's independence for an attack west of the river Oise, but included the responsibility to protect the right flank of the whole advance, to prevent a buildup of a threat in its operations area,

⁸⁶ Herwig, *The Marne, 1914*, 156, 169-172.

⁸⁷ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 68-73.

and to support Second Army, if necessary. The latter was to attack towards Paris and keep Third Army informed to coordinate the advance. Third Army was to attack towards Chateau Thierry.⁸⁸

The decision reflects a good understanding as far as the results of the battles that the army commanders had reported. The assessment of the enemy situation conveyed with the order proved to be right. It had been collected not only through the reports by the different armies, especially the communications with First Army remained patchy, but also from overhearing the reports the cavalry corps sent to their respective armies by wireless radio. Moltke identified an opportunity to force a decision and acted appropriately and provided the army commanders with the required guidance.

Decision Point 5

During the next days, the right wing continued its advance at a high pace, but was nevertheless not able to force the withdrawing enemy into a decisive fight. On 29 August, First Army defeated what seemed to be different units, not yet concentrated. At the same time, Second Army got into a fight with an apparently superior enemy and requested support by First Army. Kluck had to weigh the responsibility of protecting the right flank of the advance to counter an ambiguous threat against support to Second Army in a potentially decisive battle. The former meant attacking in accordance with the OHL directive in southwestern direction, the latter deviating from it and pivoting towards the south.

⁸⁸ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 301-307.

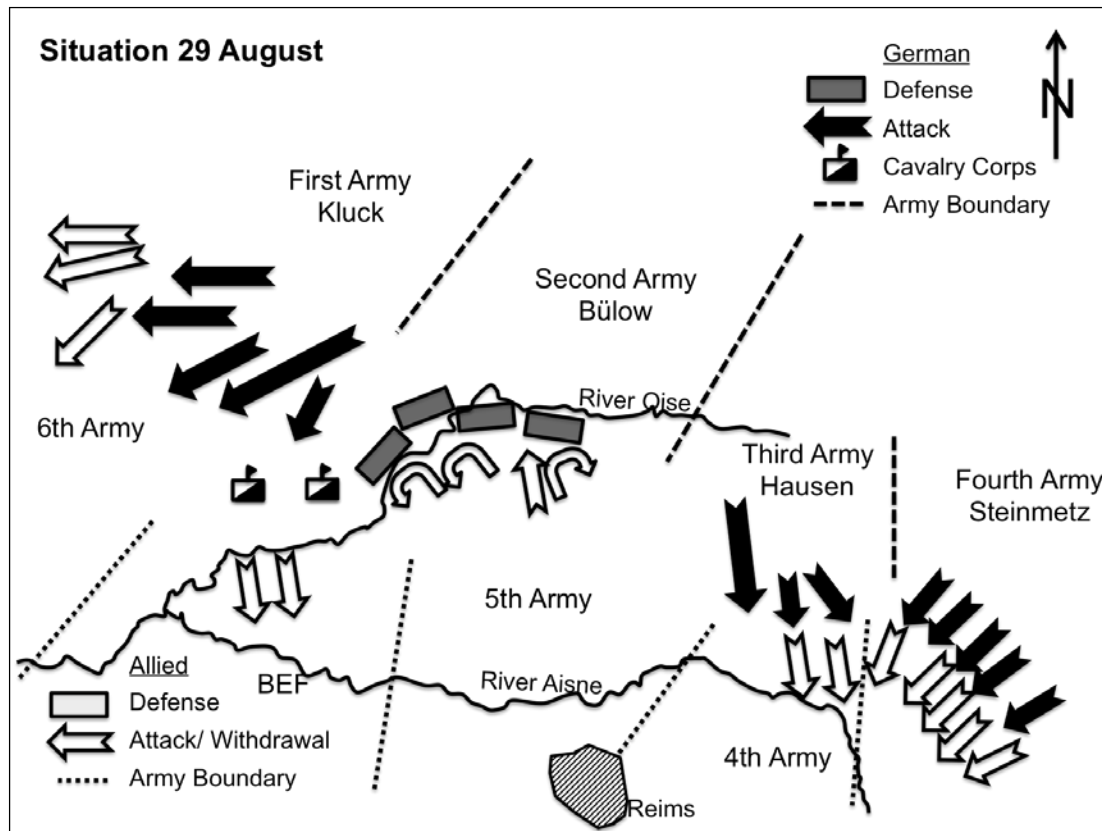


Figure 3. The pivot to the South.

Source: Figure created by author using information from Fritz von Mantey, *Kartenbild des Marnefeldzuges und der Marneschlacht vom 28. August bis 10. September 1914*, map 2.

Kluck continued his attack according to the OHL order, supporting Second Army with only one division. The next day, 30 August, brought clarity about the enemy in front of First Army. It had not only been defeated, it had fled towards the west and southwest. The immediate flank threat had dissolved. Additional information about the absence of enemy forces in front of First Army tipped the scale towards supporting Second Army and pivoting to the south, hence setting the advance to a track east of Paris.⁸⁹

With hindsight, the decision to change the axis of advance to the south was pivotal for the further progress of the campaign. It set the German Army on a course east of fortress Paris, which finally allowed for the establishment of a French flank threat that stopped the

⁸⁹ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 341-350, 351-355.

German advance. Criticism that Kluck had arbitrarily deviated from the Schlieffen Plan that had foreseen his advance west of Paris is wrong. First, the Schlieffen Plan, as a concept, had never detailed the question of the position of the individual units in the field; it was a deployment plan with an employment concept. Secondly, although most images depict an envelopment including Paris, Schlieffen's last *Kriegsspiel* (war game) in 1905 actually covered both axes of advance with the scenarios *Kuhl II* west of Paris and *Freytag II* east of the fortress. Finally yet importantly, Kluck claims that he informed the OHL in the evening of 30 August and gained Moltke's approval. This is credible because Third Army shortly afterwards gained approval for its advance in a southerly direction, including the information that Second Army would link up. This only makes sense if Moltke had agreed to pivot his right wing to the south.⁹⁰

Kluck made the decision with the necessary information and coordination in place. Born out of the tactical necessity to support Second Army, it made sense through the operational lens, as well. A defeated enemy fleeing northwest of Paris did not constitute a valuable operational objective. In addition, the strain on his forces and the logistical services supported a less ambitious advance. Given the unreliability of communications to the OHL, making the decision and informing his superior after the fact, was consistent with the command philosophy and culture of the German Army.

⁹⁰ Gerhard P. Gross, "There was a Schlieffen Plan. Neue Quellen," in Ehlert, Epkenhans, and Gross, *Der Schlieffenplan, Analysen und Dokumente*, 117-160; Kluck, *The March on Paris and the Battle of the Marne*, 83-84; Baumgarten-Crusius, *Die Marneschlacht 1914 insbesondere auf der Front der deutschen dritten Armee*, 53-54. Osborne Humphreys and Maker provide an alternative account of the events. It explains the OHL approval as caused by Third Army's pivot to the south requiring Second and First Army to pivot too, in order to maintain a cohesive front. Given the emphasis on Bülow's and Kluck's armies, Third Army's roll as a connector to the German center, and the OHL's awareness of the necessity to protect the right flank this seems to be implausible. Osborne Humphreys and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 401-402, 434.

Decision Point 6

On 31 August, the French 5th Army in front of Second Army began to withdraw. While he assessed the British forces to be outside of First Army's reach, Kluck initiated a relentless three-day advance south to fall into 5th Army's flank and force battle upon them. They fought continuously against rear guards but could not catch up with the BEF or threaten the French flank. Second Army spent the day in preparation for the assault on the fortress of La Fère. As a result, it lagged one day behind when both armies continued the advance against a withdrawing enemy, until First Army reached the river Marne area in the evening of 2 September. Third Army had to overcome some resistance until the enemy, in the afternoon of 1 September, joined the general retreat.⁹¹

Not only at the right wing, but also in the center, the French forces started to withdraw. The advances of Fourth, Fifth, and Sixth Army indicated the opportunity to cut off the fortress of Verdun and break through the fortified lines behind the Franco-German border. With a delay of more than a day, information flow between First and Second Army and the OHL, now located in Luxembourg, became increasingly limited. The successes in the center and the obviously rapid advance of the right wing was interpreted at the OHL as an opportunity to push the French Army from Paris in a southeastern direction and envelop it. Given that First Army seemed to have gained the French flank by a wide margin, it was supposed to provide the flank protection against Paris for this endeavor. Although this task would be at the cost of the forward reaching envelopment force, Moltke hoped that Second Army could apply sufficient pressure on the French left flank by reaching out into a southwestern direction.⁹² Consequently, on the evening of 2 September, the OHL issued the following order: "The OHL intends to push the French away from Paris towards the

⁹¹ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 408-429, 439.

⁹² *Ibid.*, 439-445.

southeast. First Army Headquarters follows Second Army in echelon and continues to be responsible for protecting the German Army's flank."⁹³

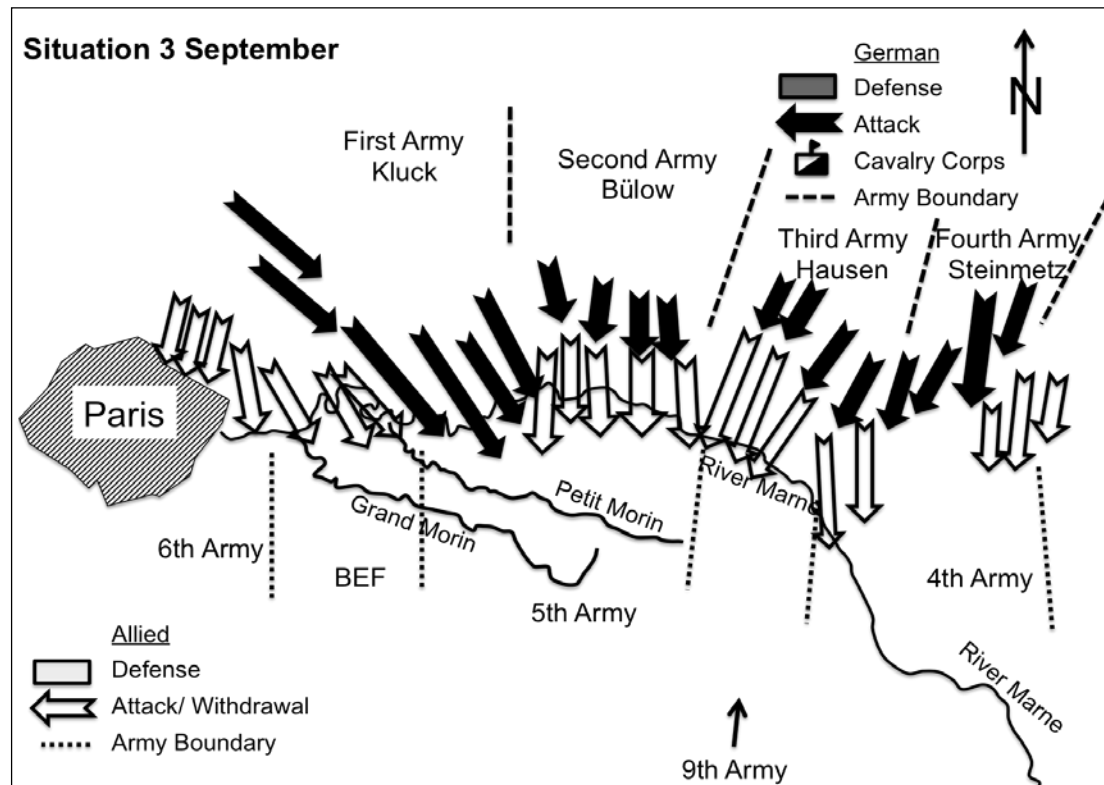


Figure 4. First Army's crossing of the River Marne.

Source: Figure created by author using information from Fritz von Mantey, *Kartenbild des Marnefeldzuges und der Marneschlacht vom 28. August bis 10. September 1914*, map 7.

When First Army received the order on 3 September, its two corps of the right wing had already crossed the river Marne and were pushing the French flank in a southeastern direction, into the axis of advance of Second Army that still lagged behind. Several bridges across the Marne were intact and Kluck faced the decision whether to obey the wording of the order or to keep up the pressure on the French according to its intent. Kluck decided to maintain the pressure with the three corps already south of the Marne and follow with the rest

⁹³ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 445.

of his force in echelon, providing a mobile flank protection thus taking considerable, but manageable risk. He informed OHL, Second, and Third Army accordingly.⁹⁴

Kluck made the decision with considerable intelligence and friendly forces information, given the nature of the operation. Weighing the benefit of constant pressure on the enemy withdrawing across the river Marne, a substantial obstacle, against the risks associated with his mobile flank guard, he came to a different conclusion, how to serve best the intent of pushing the French from Paris, than Moltke. His action in accordance with his superior's intent, Kluck's decision was fully covered by the philosophy of *Auftragstaktik* and appropriate initiative, when facing a fundamental change in the situation.⁹⁵

Decision Point 7

Kluck was aware that he had to resolve the dilemma as far as his depth of pursuit and the ability to cover against Paris was concerned. With more and more information about substantial troop movements trickling in, the OHL recognized a growing threat to the western flank of the German advance. In a fundamental change to the general concept of operations, Moltke had decided to halt the right wing's advance, regroup to counter the threat emanating from Paris, and seek decision in the center and on the left wing. Towards this aim, the OHL issued an order on the evening of 4 September detailing:

First and Second Army remain facing eastern front of Paris: First Army between [rivers] Oise and Marne, holding Marne crossings west of Château-Thierry, Second Army between Marne and Seine holding the Seine crossings between Nogent and Méry, inclusively. Third Army marching in the direction of Troyes and east.⁹⁶

⁹⁴ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 449-454.

⁹⁵ For a detailed analysis of appropriate levels of initiative within *Auftragstaktik* see Sonnenberger, "Initiative within the Philosophy of *Auftragstaktik*, Determining Factors of the Understanding of Initiative in the German Army 1806-1955."

⁹⁶ Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 480.

At the same time, respective orders were sent out to the other armies, each providing information for their part of the operation and the missions of the adjacent units.⁹⁷

First Army received the order the morning of 5 September. The corps had already resumed their offensive movements in accordance with Kluck's plans to protect the right flank by keeping pressure on the French and British forces.

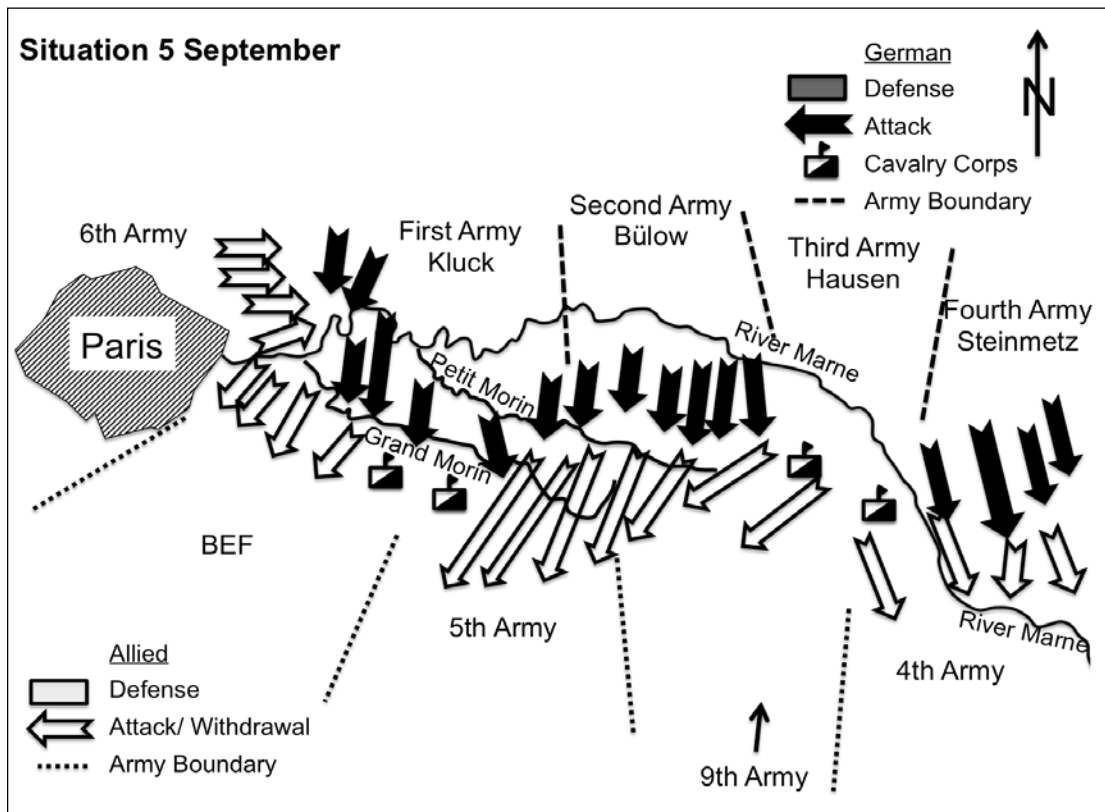


Figure 5. Looming Counterattack.

Source: Figure created by author using information from Fritz von Mantey, *Kartenbild des Marnefeldzuges und der Marneschlacht vom 28. August bis 10. September 1914*, map 9.

Following the order would mean breaking contact and two to three days of withdrawal. The development struck Kluck as a total surprise. He immediately began the

⁹⁷ Fritz von Mantey, *Kartenbild des Marnefeldzuges und der Marneschlacht vom 28. August bis 10. September 1914* (Berlin, Germany: E. S. Mittler und Sohn, 1927), 34; Osborne Humphries and Maker, *Germany's Western Front, Translations from the German Official History of the Great War*, 479-480.

redeployment of units not in contact. With limited communications, he only received a picture of the overall situation when Lieutenant Colonel Hentsch arrived from the OHL in the evening of that day.⁹⁸

Beginning on 5 September, the French 6th and 9th Armies and the BEF advanced against the German Armies. French Supreme Commander General Joffre had created 6th Army, a conglomerate of units withdrawn from the front in Lorraine and assembled at Paris and 9th Army. The French executed a desperate, but ferocious simultaneous attack against the front of German Second Army and the flank of First Army. By the evening of 6 September, it was clear to the OHL that the decisive battle had begun.⁹⁹

First Army, in the next three days, mounted an active defense towards the west against forces emanating from Paris, aiming to not only repulse them, but defeat them through counterattacks. Second Army faced forces that attacked frontally from the south. Without overall coordination, each army fought its own fight, both were drawn away from each other, creating and then widening the gap between them. As a covering force, First Army employed two cavalry corps with the mission to delay an enemy advance by defending the river valleys of the Grand Morin, the Petit Morin, and ultimately the Marne.¹⁰⁰

Absent overarching coordination from the OHL, First and Second Army even had issues with their communications between each other. When First Army, on 7 September, received information of the BEFs advance into the gap between the two armies, it could neither coordinate the reaction nor know that Bülow had withdrawn his right wing, widening the gap even further. For Kluck, the question of whether to withdraw or continue his active defense boiled down to the estimation of whether he could defeat the French 6th Army east of

⁹⁸ Fritz von Mantey, *Kartenbild des Marnefeldzuges und der Marneschlacht vom 28. August bis 10. September 1914*, 38-41; Kluck, *The March on Paris and the Battle of the Marne*, 104-107; Herwig, *The Marne, 1914*, 238-240.

⁹⁹ Ibid.

¹⁰⁰ Herwig, *The Marne, 1914*, 240-244, 249.

Paris before the BEF marched into the gap between the two armies. Bülow's corps of the right wing were turned to the north and hence could not close the gap towards First Army.¹⁰¹

On 8 September, there were mixed results. Second Army had been thrown back behind the Petit Morin, Kluck assumed that the next day would bring the defeat of the French 6th Army, and the gap between the two armies, still covered by weak forces only, had widened to 50 kilometers with the BEF cautiously advancing into it.

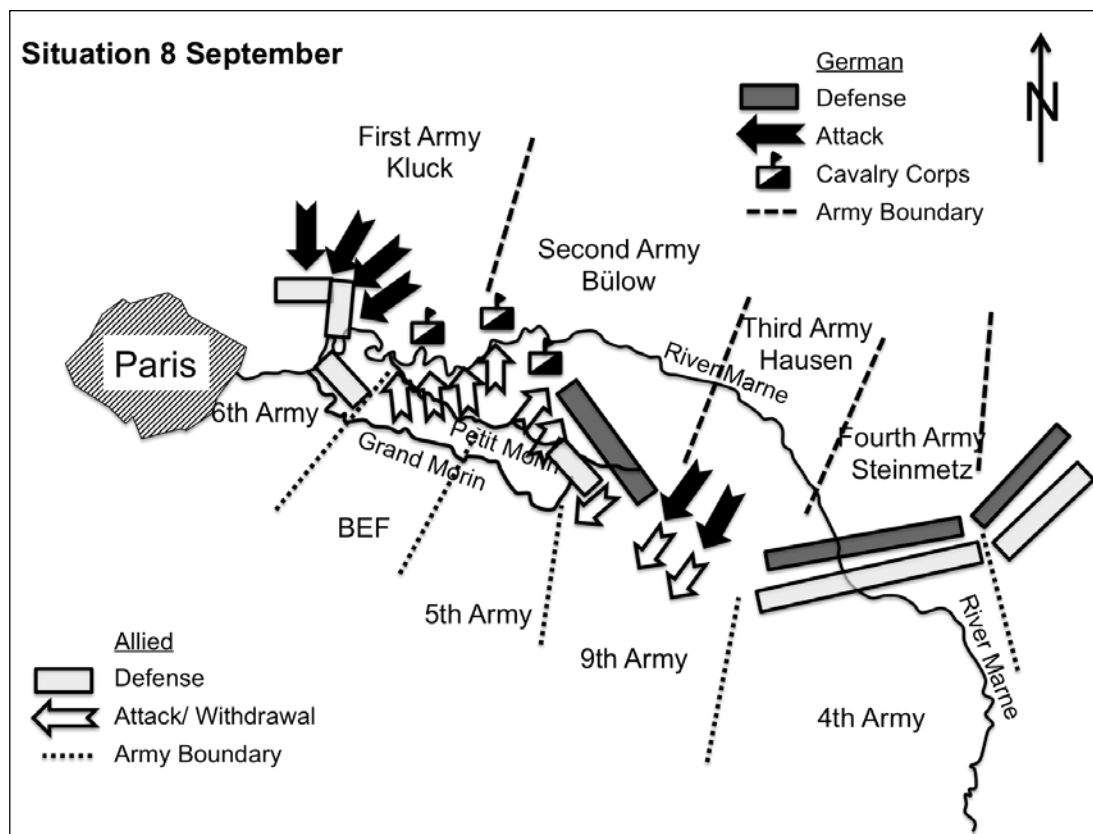


Figure 6. Culmination.

Source: Figure created by author using information from Fritz von Mantey, *Kartenbild des Marnefeldzuges und der Marneschlacht vom 28. August bis 10. September 1914*, map 12.

Moltke at the OHL had not received any information from his two armies on the right wing for two days. He feared that First Army had already been cut off and needed clarity

¹⁰¹ Herwig, *The Marne, 1914*, 246-253.

about the situation. To this end, Moltke again sent Hentsch to the front provided with the authority to act in his name. Visiting Fifth, Fourth, and Third Army in the course of the afternoon, Hentsch was pleased to receive optimistic assessments of the respective army's situation and an offensive spirit at each of his stops.¹⁰²

Arriving at Second Army's headquarters in the evening of 8 September, whatever optimism might have been in Hentsch was dampened. The command post vehicles had been parked in withdrawal direction and the situation of the right wing was serious, bearing the risk of envelopment by the French 5th Army and BEF. Hentsch brought up the OHL view that First Army could not defeat the French offensive from Paris and that enemy formations were exploiting the gap between First and Second Army. Bülow described the situation of his army as serious based on the flank threat and the overall strain that had "burned his forces to cinder."¹⁰³ Hentsch then informed Bülow of his authority to issue orders on behalf of the OHL and stated the opinion that a withdrawal of both armies was necessary. When Bülow brought up the alternative of closing the gap and protecting Second Army's right wing through a withdrawal of First Army only, Hentsch demurred that First Army was no longer capable of conducting such a complicated maneuver. Although the idea of a retreat had been considered during the discussion, the conclusion was that Second Army could hold if First Army would withdraw eastward and link up with Bülow's right wing.¹⁰⁴

While Hentsch was en route to First Army, the situation changed. Morning reconnaissance on 9 September revealed further advancement of the enemy into the gap. Bülow decided to initiate the retreat and informed First and Second Army accordingly. When Hentsch arrived at First Army, he was dumbfounded upon being briefed by the Chief of Staff that the BEF advance into the gap was not assessed to be serious, as experience had shown that the British were operating slowly. First Army's right wing was about to turn the French

¹⁰² Herwig, *The Marne, 1914*, 261-265, 271-273.

¹⁰³ *Ibid.*, 274.

¹⁰⁴ *Ibid.*, 273-276.

6th Army's flank. Hentsch marked a line of retreat based on Second Army's withdrawal on the Chief of Staff's map. When the Chief of Staff objected, Hentsch presented that Bülow had not made the decision for Second Army's withdrawal carelessly, but that the army was "burned to cinder."¹⁰⁵ He then exercised his authority and ordered First Army to withdraw. Neither Hentsch nor the Chief of Staff, cared to send for Kluck who was merely meters away within the command post area. The order marked the culmination of the German attempt to defeat the French in a bold quick drive.¹⁰⁶

This decision point clearly shows the inadequacies of the German mission command during this phase of the campaign. Both the geographical distances and the fact that the enemy had seized the initiative put additional burden on the capability to make timely decisions and coordinate the actions of the armies. The command structure, in absence of Moltke's capability to control and coordinate the fight, was characterized by a fractured status, in which the army commanders controlled their own fight, but were increasingly limited in unifying their efforts. Communications at this point were inadequate, not only from the armies towards the OHL, but increasingly so even between them.

For the first time in the campaign, this decision point depicts the loss of a common operational picture of the commanders involved. The only remedy to this was detaching General Staff Officers from the OHL to the different armies to merge the situational awareness of the different levels, a practice frequently used through the course of the campaign, in accordance with the German pre-war doctrine.¹⁰⁷ In this case, in addition to referring to his authority, Hentsch at first influenced the decision of General Bülow through his personal assessment of First Army's situation, based upon the limited information he had brought from the OHL. Upon arrival at First Army's command post, he used the description

¹⁰⁵ Herwig, *The Marne*, 1914, 282.

¹⁰⁶ Herwig, *The Marne*, 1914, 276, 281-283; Kluck, *The March on Paris and the Battle of the Marne*, 134-139.

¹⁰⁷ See page 10.

of the state of Second Army as “cinder,” instead of providing the conclusion, based on Bülow’s assessment, that it could hold its position if First Army would protect its flank to enforce a retreat.

The Art of Command and the Science of Control in the World War I German Army

In our reflections on the theory of the conduct of war, we said that it ought to train the commander's mind, or rather guide his education; theory is not meant to provide him with positive doctrines or systems to be used as intellectual tools. Moreover, it is never necessary or even permissible to use scientific guidelines in order to judge a given problem in war, if the truth never appears in systematic form, if it is not acquired deductively but always *directly* through the natural perception of the mind, then that is the way it must also be in critical analysis. [original emphasis]¹⁰⁸

— Carl von Clausewitz, *On War*

The quote from Clausewitz about critical analysis is preceded by several pages that discuss the inability of identifying direct cause and effect relations in warfare, and the psychological context success or failure has on this analysis. This section, in addition to not engaging the counterfactual question whether the decisions described in the third section were right or wrong, aims at providing a natural perception informed by the lens of US Army doctrine and insight into the German Army's command philosophy, command structure, and communications. It identifies objectionable patterns that illuminate the tension between the art of command and the science of control.

The analysis shows that the German Army possessed a doctrinal framework and a culture that endorsed decentralized execution and initiative. Preparation for the war, however, had failed to achieve clarity about the operational approach and omitted the development of a functioning command structure. Means of communications did not allow for adequate transmission of reports, due to deficiencies in both the speed and volume of traffic. Exempt by doctrine from reporting during an ongoing battle, commanders culturally did not see an importance in keeping the OHL and their adjacent units informed about their own situation and intentions.

The second section illustrates the affection of the German Army for decentralized execution through the culture and philosophy of *Auftragstaktik*. A key requirement for the

¹⁰⁸ Clausewitz, *On War*, 168.

decentralization is a unifying element that aligns the actions and initiative to a common purpose. Its representation in doctrine is the commander's intent, which is necessary but not sufficient. In addition, common understanding about the operational approach and a common operational picture are required.

The analysis of the individual decision points shows that decisions of the different commanders reflect the adherence to two competing operational approaches. On the one hand, the official Schlieffen approach called for a synchronized advance into France, aimed at a strategic level envelopment of the French Army either in the fortified region west of Paris or against the Swiss and German border. This approach is reflected in Kluck's insistence on outflanking the French and British forces and in Moltke's directive of 2 September. On the other hand, Bülow and Hausen focused on operational level envelopments to defeat the French armies. Moltke's directive of 27 August also follows this approach.

In terms of the common operational picture, a specific aspect of the inadequate communications played a crucial role. As the analysis of the decision points shows, until the last phase of the campaign a certain level of information flow between the armies and the OHL was possible—even if it was only from overhearing the communication between subordinate armies or with their cavalry corps. From the beginning however, the picture was incomplete because the means of communications lacked what today would be called bandwidth. The cumbersome process of encrypting, transmitting via relays, and decrypting, prohibited comprehensive situation reports. The simplified reports, for example, stressed successes without providing detail about indicators of effects on the enemy, like prisoners and captured guns, and hence misled the assessment of the OHL. The last decision point exemplifies the difficulties with this lack of a common operational picture. Absent detailed knowledge about the situation and assessments of First and Second Army, decisions about further operations, relied on assumptions and estimates.

The time delay in the transmission of reports and orders caused the final issue with decentralized execution. When the delay amounted to twelve hours for a one-way

transmission, a decision made by the OHL was based on one-day-old information when the order was received at the army level. A comparison of the quick succession of decision points with the increasing delay of (at the end) twenty-four hours one way or two days until an order based on a situation report would reach an army shows the difficulties of providing an overarching intent in a timely manner to unify the operations of the different armies.

Initiative and the willingness to take responsibility as a highly praised cultural value in the German Army can, with one exception, be seen throughout the execution of the advance into France. In general, holding the reigns of commanders more than willing to make decisions based on their own judgment was a larger challenge than fostering autonomy. The one exception is Commander Third Army, General Hausen. The analysis of decision point 3 indicates his indecisiveness resulted in splitting his forces to serve all masters. Similar instances during the following days are for space restrictions omitted in the analysis.

Turning to the science of control element of the analysis; the German Army was doctrinally aware of the restrictions wireless communications, the “high tech” of its age, brought with them. Culturally however, overcoming such inadequacies seemingly did not have a high priority for the army commanders. Relieved by doctrine from the responsibility to report their situation during battles, the analysis of the decision points does not indicate a larger concern with keeping Moltke or the adjacent units informed other than in cases where a commander requested support. Given the restrictions of communications, none of the literature reviewed indicates for example the use of airplanes to exchange information or liaison elements.

The analysis of the command structure on the German right wing does not indicate a high priority for consideration either. No pre-war preparations like the creation of army group commands had been taken and the war plan itself did not foresee specific command relationships. The OHL was formed by simply renaming the peacetime structure of the General Staff. The armies on the right wing started off as independent units under the OHL. When, on 17 August, Moltke subordinated First Army to Second Army and General Bülow

received coordinating authority for the right wing, the implications within an operational approach that would make First Army the key player on the right wing had not been discussed. A justification for reestablishing First Army's independence on 27 August, other than the fact that Kluck's and Bülow's personalities seemed to have caused some friction, could not be found in the literature. Overall, the command structure does not seem to have played a prominent role in considerations prior to and during the campaign.

The analysis clearly shows that the German Army heavily relied on the art of command as they had during the wars of unification. The doctrinal framework promoting decentralized execution aimed towards a common goal was not a hollow theoretical construct; it was deeply engrained into the culture of the officer corps. This combination of the philosophy of *Auftragstaktik* and the culture that hailed taking responsibility was able to mitigate some of the negative effects of communications. Aligning decisions towards a unified effort however, requires the ability to communicate the higher commander's intent and a common operational picture. Neglect of the required science of control, represented by an inadequate command structure, caused some of the most significant problems the German Army had coordinating the right wing of the Western Front in the early weeks of World War I.

A final qualitative consideration this analysis aims for is the value judgment of whether the individual decisions reflect professional reasoning, given the information available. Following Clausewitz's premise, that critical analysis is to train the mind or inform the education, this "acquaintance with the subject"¹⁰⁹ is the ultimate aim. Attempting to "accurately trace all the circumstances and individual events"¹¹⁰ and being aware that this attempt is highly subjective, the analysis shows that erratic behavior or the aim for individual gains did not play an identifiable role in the actions of the commanders. All decisions presented, and the ones analyzed in the course of the research, were initiated by professional

¹⁰⁹ Clausewitz, *On War*, 141.

¹¹⁰ *Ibid.*, 172.

judgment based on the knowledge of the day, the paradigms of warfare in the German Army,
and the attempt to meet an overall aim.

Finding the Right Balance: Concluding Thoughts on the Art of Command and Science of Control

[W]ithout insight and vision there can be no orientation to deal with both present and future. Without focus and direction, implied or explicit, there can be neither harmony of effort nor initiative for vigorous effort. Adaptability implies variety and rapidity. Without variety and rapidity one can neither be unpredictable nor cope with changing and unforeseen circumstances. Without security one becomes predictable, hence one loses the benefits of the above. (original emphasis)¹¹¹

— John Boyd, *Organic Design for Command and Control*

The German Army in 1914 went to war with an unclear operational concept, executed through an inappropriate command structure and overextended respectively overwhelmed communications. The command philosophy compensated for the deficiencies, but could not fully overcome them. Unable to apply a sufficient level of the science of control, the OHL had to rely on the art of command and initiative of the army commanders.

At first glance, the challenges of World War I commanders to gain and maintain an overview of their own forces and intelligence about the enemy, communicate their intent, and coordinate their action, resist the notion of being relevant to current warfare. Blue force tracking and integrated information systems seem to diminish friction, modern communications systems allow for the integration of real time full motion video from the individual soldier to the commander in chief. All these means and efforts, however, only create the delusion of understanding the situation on the ground in all its complex facets.

The current US Army Operating Concept describes requirements that are as applicable today as they were in 1914:

Joint combined arms operations allows joint force commanders to operate consistent with the tenet of initiative, dictating the terms of operations and rendering the enemy incapable of responding. . . . Units possess the ability to operate dispersed over wide areas because they are able to integrate intelligence and operations to develop

¹¹¹ John Boyd on Organic Design for Command and Control, cited in Frans P. B. Osinga, *Science, Strategy and War, The Strategic Theory of John Boyd* (New York: Routledge, 2007), 190.

situational understanding through action while possessing the mobility to concentrate rapidly.¹¹²

Enabling initiative requires not only providing leeway for individual action of commanders, but also the provision of focus and direction to allow for what Boyd calls harmony.¹¹³

Overstretched areas of operations, increasingly complex environments, and the challenges posed by multinational command relations replace the difficulties World War I commanders had to face.

The more extensive dispersion of forces on modern battlefields, enabled by improved means of communications and increased firepower, leads to smaller and smaller units operating on their own in overstretched areas of operations. This requires that higher commanders refrain from interfering in the execution of small unit operations and allow for initiative comparable to the one shown by World War I army commanders at the lowest possible level. A prerequisite for this is training and education that enables the lower level leaders to evaluate their actions within the framework of the larger concept of operations. Higher commanders have to provide guidance that creates the harmonizing effect Boyd describes.

Complex environments prevent planning for all eventualities and contingency prior to their occurrence. Depictions of the situation based on integrated information systems or video feeds create the delusion of a situational awareness. This poses the risk of making decisions in a comparable manner to the one Hentsch faced on 8 and 9 September 1914.¹¹⁴ The assessments of the situation by the responsible commanders on the ground, in contrast, provided a comprehensive evaluation of environmental factors as well as the capabilities of

¹¹² US Department of the Army, *The US Army Operating Concept, Win in a Complex World* (Washington, DC: Government Printing Office, 7 October 2014), iii.

¹¹³ John Boyd argues, that initiative and decentralized execution require harmony, a unifying aim that ensures that the decentralized efforts of different units follow common goal. It consists of common understanding about the operational approach and the higher commander's intent. See Osinga, *Science, Strategy and War, The Strategic Theory of John Boyd*, 189-190, 194-197.

¹¹⁴ See page 39-40.

the force employed. These lower level command understandings of their own situations, therefore, must be the basis for decisions.

A variety of forces operating with diverse purposes, in a common area of operations pose the risk that effects are not coordinated and operations become fractured, as can be seen in the lead up to decision point 7, when the German First and Second Army each fought its own fight.¹¹⁵ This will regularly be the case when multinational partners provide specifically tasked forces like advisory teams, or when the operations of special and conventional forces are not integrated. In such an environment, effects coordination is a critical requirement for creating harmony and unified effort.

¹¹⁵ See page 36-41.

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